

DETAILED ACTION

Response to Petition

1. Applicant's petition to withdraw the final rejection mailed July 1, 2009 and to reset the time for response has been received. The communication combines two different requests for relief into the same document. It is being treated both as a request to restart the reply period in accordance with MPEP 710.06 and as a request for reconsideration under 37 CFR 1.111 and 1.181 (c).
2. Applicant's request to reset the reply period is granted, and the request to withdraw the finality of the rejection is denied.
3. Applicant's request to reset the reply period is based upon the mailing of the final rejection of July 1, 2009 to an incorrect address and for the failure to include a copy of the Japanese reference, Ono. The request has been made within one month of the mail date of the last Office action. Therefore, the Office has restarted the previously set period for reply to run from the date this action is mailed, and is including a copy of the Ono reference with this Office action. The Office wishes to apologize for any inconvenience caused by these mistakes.

4. Applicant argues that the March 12, 2009 amendment to Claim 1 incorporated dependent Claim 45, "which the Office should reasonably have expected." As an initial observation, review of applicant's filings shows Claim 45 was defective due to contradictions between the original filing and preliminary amendment before first action on the merits. In the preliminary amendment, Claim 45 was listed as an original claim whereas it was clearly amended to change its dependency to Claim 44. In any case, the examiner had clearly indicated that the assumed dependency was on Claim 44, not on Claim 1, for purposes of the action mailed on September 12, 2008. Following applicant's logic, the only "reasonable" option the examiner should have followed was to reject claim 45 based on its dependency on Claim 44. The examiner had no obligation to expect the dependency of Claim 45 to be on Claim 1.

5. When applicant amended the claims to cancel Claim 45 and to incorporate those limitations into Claim 1, the applicant made an amendment which necessitated new grounds of rejection. Further, the applicant did more than simply incorporating the limitations of claim 45 into claim 1. Phrases such as "radially movable" and "acting as a detent" were introduced in addition to incorporating the limitations of claim 45, which even further change the scope of Claim 1. Therefore, the final rejection was proper.

Claim Rejections - 35 USC § 112

6. The previously made 112 2nd paragraph rejections are hereby withdrawn in view of amendments to the claims submitted on March 12, 2009.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 12, 15, 16, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Homg (US Patent 6,498,412 B2) and in view of Ono et al (Japanese Patent JP 2002171712 A, English Translation)

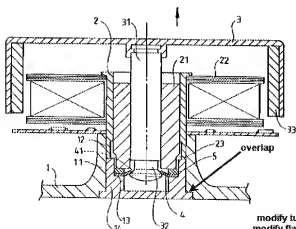


FIG. 10

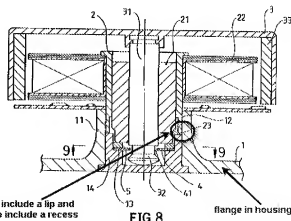


FIG. 8

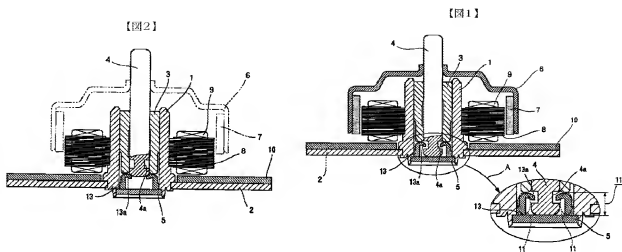
modify tube to include a lip and
modify flange to include a recess

flange in housing

9. In Re claim 1, with reference to Figure 7, Hornig discloses a mini-fan (Column 2, Lines 49-50 state: "The casing 1 can be any conventional casing for a motor or heat dissipating fan") that comprises:

- a drive motor (Figures 7, 8, 10) having an external rotor (3) and an internal stator (22), the external rotor being equipped with a rotor shaft (31) that has a necked down portion (32) adjacent its free end (spherical distal end);
- a bearing tube (2) on whose outer side the internal stator is mounted as depicted, and in whose interior is arranged a bearing arrangement (21) in which the rotor shaft is rotatably supported (Column 2, Line 60 states: "...for rotatably holding a shaft");
- a closure arrangement (14) that closes off the bearing tube in liquid-tight fashion at one end (space 23 is for lubricating oil, so the closure arrangement would have to be "liquid tight to avoid leaks), and is equipped adjacent the necked down portion of the rotor shaft (as depicted) with at least one resilient radially movable latching member (4) acting as a detent that engages into that necked down portion of the rotor shaft and, without disturbing normal operation of said rotor shaft, secures the rotor shaft against being pulled out of the bearing arrangement (Figure 8 shows the securing member extending into the necked down portion).

10. It would have been obvious to a person having ordinary skill in the art at the time of the invention to integrally form the closure arrangement (14) and the resilient latching member (4) as one piece since it has been held that forming in one piece (making integral) an article which has formerly been formed in two pieces and put together involves only routine skill in the art - MPEP 2144.04 (V-B).



11. Alternatively, with reference to Figures 1 and 2 depicted above, Ono et al discloses a drive motor having an external rotor (6), an internal stator (9), rotor shaft (4), necked down portion (4a), bearing tube (1), closure arrangement (5, 13) with radially movable latching member (13a) that secures the rotor shaft from being pulled out of the bearing arrangement wherein:

- the closure member (5) and latching member (13a) are formed integrally with each another as stated in Paragraph [0031] of Ono et al: "... invention is not limited to this ... FIXES the base end of the slip off stop member 13 to the ... thrust pad 5"

12. It would have been obvious to a person having ordinary skill in the art at the time of the invention to integrally form the closure arrangement and the resilient latching member of Homg as taught by Ono et al since it has been held that forming in one piece (making integral) an article which has formerly been formed in two pieces and put together involves only routine skill in the art - MPEP 2144.04 (V-B).

13. In Re claim 12, Horng discloses resilient member (4) protrudes into the necked down portion without touching it as depicted in Figure 8.

14. In Re claims 15 and 16, Horng discloses that the closure arrangement is a plug that abuts the bearing tube at its opening as depicted, and in a liquid tight manner as discussed earlier.

15. In Re claim 18, as depicted in Figure 7 of Horng, in the vicinity of space (23), the tube (2) has a slightly higher inside diameter where the plug is received than the rest of the tube all the way to the top end.

16. Claims 2, 3, 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horng (US Patent 6,498,412 B2) in view of Ono et al (Japanese Patent JP 2002171712 A, English Translation) and in view of Fujinaka (US Patent 6,832,853 B2) and further in view of Joachimi et al (PG Pub US 20030130381 A1)

17. In Re claim 2, Horng and Ono et al as applied to claim 1 discloses all the claimed limitations except the cover is made of thermoplastic and is attached by a liquid tight weld join as claimed.

18. Nevertheless, Fujinaka discloses in Column 4, Lines 27-30 that cap (9) of the motor is welded to boss (2) in a "substantially" liquid tight weld join ("..if cap 9 solidly contacts with the bearing boss (2) the lubricant will not leak to the outside").

19. It would have been obvious to a person having ordinary skill in the art at the time of the invention to join the closure arrangement (14) and the flange (1) of Hornig by welding as taught by Fujinaka for the purpose of preventing the lubricant from leaking to the outside as stated by Fujinaka above.

20. Hornig modified by Ono et al and Fujinaka discloses all the claimed limitations except for the material of the cover being a thermoplastic that is at least partially transparent to laser light.

21. Nevertheless, Joachimi et al discloses in Paragraph [0007] that thermoplastics materials are largely transparent or laser-translucent over a certain wavelength range.

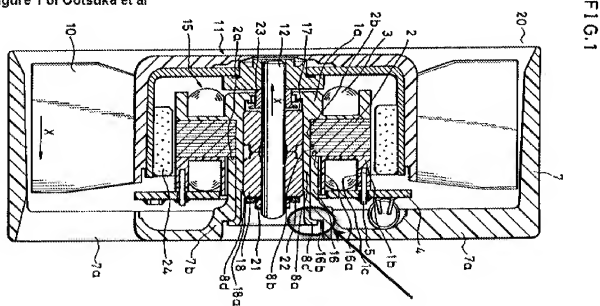
22. It would have been obvious to a person having ordinary skill in the art at the time of the invention to make the closure arrangement of Hornig of thermoplastic material that is transparent to laser light as taught by Joachimi et al because it is suitable for laser welding as stated by Joachimi et al in Paragraph [0007]: "..lasers that are normally used for thermoplastics welding..".

23. In Re claim 3, Fujinaka discloses in Figure 5 that boss/flange (2) contacts the cap/cover (9) at the lower end and is welded thereat, therefore one of ordinary skill would have welded the cover of Hornig to the flange at the portion of overlap which is also at the lower end.

24. In Re claim 28, Fujinaka discloses a sintered bearing (3) arranged in a bearing tube (2) that has a reduced inner diameter as depicted in Figure 9 ("difference in inner diameters").

25. Claims 4, 5, 7-9, 17, 19, 29 (alternatively), 35-41 (alternatively) are rejected under 35 U.S.C. 103(a) as being unpatentable over Horng (US Patent 6,498,412 B2) and Ono et al (Japanese Patent JP 2002171712 A, English Translation) in view of Fujinaka (US Patent 6,832,853 B2) and Joachimi et al (PG Pub US 20030130381 A1) and further in view of Ootsuka et al (US Patent 5,264,748 A) and Horng et al (US Patent 6,819,021 B1)

Figure 1 of Ootsuka et al



26. In Re claim 4, Horng, Ono et al, Fujinaka and Joachimi et al as applied to claim 2 disclose all the claimed limitations except for the bearing tube being held between the closure arrangement and a portion of the flange.

27. Nevertheless, with reference to Figure 1 depicted above, Ootsuka et al discloses a lip at the end (8c') of the bearing holding part that is welded to a recess in part (16).

28. It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the end of the bearing tube of Horng so it has a lip as taught by Ootsuka et al, and to form a corresponding recess as taught by Ootsuka et al in the flange section of the housing of Horng resulting in the bearing tube being held between the flange and the closure element by abutting of the closure element, for the purpose of increasing the engaging strength between the axle tube and base as stated in Column 3, Lines 46-50 of Horng et al: "the lower portion of the outer periphery of the axle tube 11 is securely engaged with the inner periphery of the flange 102, with the protrusion 111 being securely engaged in the positioning groove 103. Thus, the engaging strength between the axle tube 11 and the base 10 is increased".

29. In Re claim 5, Ootsuka et al discloses a lip at the end (8c') of the bearing holding part is welded to a recess in part (16), a weld can be made liquid tight. Also Horng et al states that rotation of the axle tube relative to base is prevented suggesting a press fit (Column 3, Lines 51-53 of Horng et al).

30. In Re claims 7, 8, 9 Horng modified Ootsuka et al disclose the radial projection (implemented as a flange) is provided at the end of the tube positively engaged between the closure arrangement and flange as suggested by the combination of the elliptically annotated inserts in the figures above.

31. In Re claim 17, Ootsuka et al discloses the lip which is an annular ridge and the recess which is the annular groove that are in a latching connection as depicted. The transition point can also be read as the weld discussed in claim 5. The weld in itself could be read as the groove/ridge combination.

32. In Re claim 19, Ootsuka et al discloses the portion that protrudes away is the ridge/lip installed in an opening/recess part.

33. In Re claim 29, Horng, Fujinaka, Joachimi et al, Horng et al and Ootsuka et al as applied to claims 3, 5 and 7 discloses all the claimed limitations.

34. In Re claim 35, Horng, Fujinaka, Joachimi et al, Horng et al and Ootsuka et al as applied to claims 5 and 28 disclose all the claimed limitations.

35. In Re claim 36, Fujinaka discloses in Column 6, Lines 35-40 state that the outer wall of the bearing and inner wall of the boss is protected from scratching, therefore suggesting a better machined surface over the area of contact between the bearing and

the boss before they are press fit (Column 6, Line 44). Further, Column 6, lines 22-25 discloses a slightly greater inner diameter grooved wall. The surface finish is therefore worse for the greater inner diameter wall because of the grooves.

36. In Re claim 37, Horng discloses a fan wheel (3) that is equipped with shaft (31) and along with Fujinaka as applied to claim 36 discloses all the claimed limitations.

37. In Re claim 38, Fujinaka discloses in Figure 8 that the bearing (3) has a portion with an enlarged outside diameter, corresponding to reduced inside diameter of the bearing tube (24).

38. In Re claim 39, the bearing (3) of Fujinaka depicted in Figure 8 illustrates that its inner contact points with the shaft (4) are located on the outside portion, and have an enlarged inner diameter in the middle where it is not in contact with the shaft.

39. In Re claim 40, the contact areas between the shaft (4) and the bearing (3) are outside the contact area between the bearing (3) and tube (24).

40. In Re claim 41, Horng discloses that shaft (31) has a free end facing away from the fan wheel (3), and a closure member (14) as described in claim 1.

41. Claims 6, 30-33 (alternatively) are rejected under 35 U.S.C. 103(a) as being unpatentable over Horng (US Patent 6,498,412 B2) and Ono et al (Japanese Patent JP 2002171712 A, English Translation) in view of Fujinaka (US Patent 6,832,853 B2) and Joachimi et al (PG Pub US 20030130381 A1) and further in view of Ootsuka et al (US Patent 5,264,748 A), Horng et al (US Patent 6,819,021 B1) and Schafroth et al (PG Pub US 20020060954 A1)

42. In Re claim 6, Horng, Ono et al, Fujinaka, Joachimi et al, Ootsuka et al and Horng et al as applied to claim 5 discloses all the claimed limitations (Horng et al discloses "The axle tube 11 is preferably made of metal" in Column 1, Lines 33-34) except for the bearing tube is epilam coated on its side pressed into the flange opening.

43. Nevertheless, Schafroth et al discloses in Paragraph [0053] that the meshing of parts can be epilamized.

44. It would have been obvious to a person having ordinary skill in the art at the time of the invention to apply a coating of epilam as taught by Schafroth et al to the "meshing" exterior of the bearing tube of Horng for the purpose of electrically insulating the housing from the tube since the tube is in contact with the stator (Paragraph [0053] of Schafroth et al states that epilam is a good insulator).

45. In Re claim 30, Horng, Fujinaka, Joachimi et al, Ootsuka et al, Horng et al and Schafroth et al as applied to Claims 6 and 29 disclose all the claimed limitations.

46. In Re claim 31, Horng, Fujinaka, Joachimi et al, Ootsuka et al, Horng et al and Schafroth et al as applied to Claims 7 and 29 disclose all the claimed limitations.

47. In Re claim 32, Horng, Fujinaka, Joachimi et al, Ootsuka et al, Horng et al and Schafroth et al as applied to Claims 2 and 29 disclose all the claimed limitations.

48. In Re claim 33, Horng, Fujinaka, Joachimi et al, Ootsuka et al, Horng et al and Schafroth et al as applied to Claims 1 and 29 disclose all the claimed limitations.

49. Claims 10, 11, 34 (alternatively), 42-44 (alternatively) are rejected under 35 U.S.C. 103(a) as being unpatentable over Horng (US Patent 6,498,412 B2) in view of Ono et al (Japanese Patent JP 2002171712 A, English Translation) and further in view of Alex et al (US Patent 6,756,714 B2)

50. In Re claims 10 and 11, Horng and Ono et al as applied to claim 1 discloses all the claimed limitations except for the free end with the tracking cap is supported by a surface that is a depression and equipped with a lubricant.

51. Nevertheless, Alex et al discloses a free end of shaft (22) with a tracking cap (portion under the retainer 23) supported by a surface (Column 4, Lines 21-22: "...distal end of shaft 22 being rotatably supported by the support 35") that is a depression (15 or 35), and equipped with a lubricant (Column 4, Lines 50-52: "...allow flowing of the

lubricating oil back to a space between a bottom of the oily bearing 34 and the support 35")

52. It would have been obvious to a person having ordinary skill in the art at the time of the invention to further modify the closure arrangement of Horng modified by Ono et al to incorporate a support surface depression with a lubricant as taught by Alex et al for the purpose of reducing wear due to friction between stationary and rotating parts.

53. In Re claim 34, Horng, Fujinaka, Joachimi et al, Ootsuka et al, Horng et al, Schafroth et al and Alex et al as applied to Claims 10, 11 and 29 disclose all the claimed limitations.

54. In Re claim 42 and 43, Horng, Fujinaka, Joachimi et al, Ootsuka et al, Horng et al, Schafroth et al and Alex et al as applied to Claims 10, 11 and 41 disclose all the claimed limitations.

55. In Re claim 44, Horng, Fujinaka, Joachimi et al, Ootsuka et al, Horng et al, Schafroth et al and Alex et al as applied to Claim 17 and 37 disclose all the claimed limitations.

56. Claims 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horng (US Patent 6,498,412 B2) in view of Ono et al (Japanese Patent JP 2002171712 A, English Translation) and further in view of Chuang (German Patent DE 201 18 024)

57. In Re claim 13, Horng and Ono et al as applied to Claim 12 discloses all the claimed limitations except for the spreading member (depicted) deflecting the latching member in the RADIAL direction.

58. Nevertheless, Chuang discloses in Figure 14, a resilient member (11') that is deflected in the radial direction upon installation of shaft (3')

59. It would have been obvious to a person having ordinary skill in the art at the time of the invention to further modify the resilient member of Horng modified by Ono et al so it is deflected in radial direction as taught by Chuang for the purpose of simplifying construction and assembly by minimizing the number of parts resulting from making the resilient member and closure arrangement a monolithic inseparable piece.

60. Claims 14, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horng (US Patent 6,498,412 B2) in view of Ono et al (Japanese Patent JP 2002171712 A, English Translation) and in view of Alex et al (US Patent 6,756,714 B2) and further in view of Horng et al (US Patent 6,414,411 B1)

61. In Re claim 14, Horng, Ono et al and Alex et al as applied to claim 10 discloses all the claimed limitations except for the tracking cap acted on by magnet force urging in the direction towards the closure arrangement.

62. Nevertheless, Horng et al discloses in Column 2, Lines 64-65: "The permanent magnet on the rotor 3 and the balance plate 11 attract each other"

63. It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the part of the flange of Horng that is facing the magnet of the rotor so there is an attraction between the flange and the magnet on the rotor as taught by Horng et al for the purpose of stable rotation of the shaft (Column 3, Lines 14-15 of Horng et al).

64. In Re claim 22, Horng et al discloses the stator (12) or (91) and magnet (97) or (34), the magnet is off center relative to the stator as depicted in Figure 6. The magnet applies a force on the balance plate as discussed earlier.

65. Claims 20, 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horng (US Patent 6,498,412 B2) in view of Ono et al (Japanese Patent JP 2002171712 A, English Translation) and further in view of Gruber et al (US Patent 4,783,608 A)

66. In Re claim 20, Horng and Ono et al as applied to claim 1 discloses all the claimed limitations except for a lamination stack, stator winding coils and a rigid electrical conductor extending parallel to rotation axis as claimed.

67. Nevertheless, Gruber et al discloses a lamination stack (12) with stator winding (Column 3, Line 18) and a rigid electrical conductor (18) extending parallel to rotation axis as depicted in Figure 1.

68. It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the stator configuration of Horng to incorporate the rigid electrical conductor as taught by Gruber et al for the purpose of providing increased resistance to vibration because a rigid conductor is less prone to damage (from flexing) than a non rigid conductor.

69. In Re claim 21, Gruber et al discloses an outwardly protruding flange (17) with an orifice as depicted in Figure 1 for the passage of the electrical conductor (18).

70. Claims 23-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horng (US Patent 6,498,412 B2) in view of Ono et al (Japanese Patent JP 2002171712 A, English Translation) and further in view of Takehashi (US Patent 5,610,462 A)

71. In Re claim 23, Horng and Ono et al as applied to claim 1 discloses all the claimed limitations as depicted except for a surface to throw off lubricant into the interior of the tube.

72. Nevertheless, in Figure 1, Takehashi et al discloses a surface (58a) that is configured to throw off lubricant into tube (46c).

73. It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the portion of Horng that is attached to the fan wheel to incorporate the lubricant throwing surface of Takehashi et al for the purpose of preventing the lubricant from leaking out as stated in the abstract of Takehashi et al.

74. In Re claim 24, the surface (58a) is an undercut as depicted in Takehashi et al.

75. In Re claim 25, Takehashi et al depicts an inwardly protruding portion (46d)

76. In Re claim 26, Takehashi et al depicts a gap between (58a) and (46d).

77. In Re claim 27, Takehashi et al depicts that the inwardly protruding portion (46d) forms an undercut with the element (46c).

78. Claims 29, 35-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horng (US Patent 6,498,412 B2) in view of Fujinaka (US Patent 6,832,853 B2) and

Joachimi et al (PG Pub US 20030130381 A1) and further in view of Ootsuka et al (US Patent 5,264,748 A) and Horng et al (US Patent 6,819,021 B1)

79. In Re claim 29, Horng, Fujinaka, Joachimi et al, Horng and Ootsuka et al as applied to claims 3, 5 and 7 in the previous action discloses all the claimed limitations.

80. In Re claim 35, Horng, Fujinaka, Joachimi et al, Horng and Ootsuka et al as applied to claims 5 and 28 disclose all the claimed limitations.

81. In Re claim 36, Fujinaka discloses in Column 6, Lines 35-40 state that the outer wall of the bearing and inner wall of the boss is protected from scratching, therefore suggesting a better machined surface over the area of contact between the bearing and the boss before they are press fit (Column 6, Line 44). Further, Column 6, lines 22-25 discloses a slightly greater inner diameter grooved wall. The surface finish is therefore worse for the greater inner diameter wall because of the grooves.

82. In Re claim 37, Horng discloses a fan wheel (3) that is equipped with shaft (31) and along with Fujinaka as applied to claim 36 discloses all the claimed limitations.

83. In Re claim 38, Fujinaka discloses in Figure 8 that the bearing (3) has a portion with an enlarged outside diameter, corresponding to reduced inside diameter of the bearing tube (24).

84. In Re claim 39, the bearing (3) of Fujinaka depicted in Figure 8 illustrates that its inner contact points with the shaft (4) are located on the outside portion, and have an enlarged inner diameter in the middle where it is not in contact with the shaft.

85. In Re claim 40, the contact areas between the shaft (4) and the bearing (3) are outside the contact area between the bearing (3) and tube (24).

86. In Re claim 41, Horng discloses that shaft (31) has a free end facing away from the fan wheel (3), and a closure member (14) as described in claim 1.

87. Claims 30-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horng (US Patent 6,498,412 B2) in view of Fujinaka (US Patent 6,832,853 B2) and Joachimi et al (PG Pub US 20030130381 A1) and further in view of Ootsuka et al (US Patent 5,264,748 A), Horng et al (US Patent 6,819,021 B1) and Schafroth et al (PG Pub US 20020060954 A1)

88. In Re claim 30, Horng, Fujinaka, Joachimi et al, Ootsuka et al, Horng et al and Schafroth et al as applied to Claims 6 and 29 disclose all the claimed limitations.

89. In Re claim 31, Horng, Fujinaka, Joachimi et al, Ootsuka et al, Horng et al and Schafroth et al as applied to Claims 7 and 29 disclose all the claimed limitations.

90. In Re claim 32, Horng, Fujinaka, Joachimi et al, Ootsuka et al, Horng et al and Schafroth et al as applied to Claims 2 and 29 disclose all the claimed limitations.

91. In Re claim 33, Horng, Fujinaka, Joachimi et al, Ootsuka et al, Horng et al and Schafroth et al as applied to Claims 1 and 29 disclose all the claimed limitations.

92. Claims 34, 42-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horng (US Patent 6,498,412 B2) and in view of Alex et al (US Patent 6,756,714 B2)

93. In Re claim 34, Horng, Fujinaka, Joachimi et al, Ootsuka et al, Horng et al, Schafroth et al and Alex et al as applied to Claims 10, 11 and 29 disclose all the claimed limitations.

94. In Re claim 42 and 43, Horng, Fujinaka, Joachimi et al, Ootsuka et al, Horng et al, Schafroth et al and Alex et al as applied to Claims 10, 11 and 41 disclose all the claimed limitations.

95. In Re claim 44, Horng, Fujinaka, Joachimi et al, Ootsuka et al, Horng et al, Schaefroth et al and Alex et al as applied to Claim 17 and 37 disclose all the claimed limitations.

Response to Arguments

96. Applicant has argued that the shaft 31 of Horng shown in Figure 10 is "not at all" secured against being pulled out, however this argument is not persuasive because once the shaft force-penetrates the engaging member (4) to find its resting place, the engaging member (4) keeps it from being pulled out during operation.

97. Applicant has argued that cap (9) of Fujinaka cannot be sealed off, and that allegedly no welded join can be made as claimed in Claim 2.

98. Examiner's Response: With regards to applicant's argument that no welded join can be made; Column 4 Line 29 clearly states: "collar section 18 is WELDED". With regards to applicant's argument that the cap cannot be sealed off, the language of Claim 2 has the word "substantially", therefore "substantially liquid tight" may not require that a complete solid contact is made. The following case law is cited as support:

- "substantially" is a broad term -- In Re Nehrenberg (CCPA) 126 USPQ 383

- “substantially the same as” and “substantially corresponding to” imply clearly that something less than exact correspondence is required. –Performed Line Products Co. v. Fanner Mfg. Co. (DC N Ohio) 124 USPQ 288
- “substantially equal to” limitation under doctrine of equivalents embraces “slightly less than” – Seattle Box Co., Inc. v. Industrial Crating & Packing, Inc. (CA FC, 1984) 221 USPQ 568

Further, the phrase “EVEN IF solid contact cannot be realized” (Column 4, Line 36) suggests that solid contact is not impossible. In addition, Column 4, Lines 42-46 state: “if lubricant 15 leaks to this enlarging space 19, the surface tension produces force that pushes back lubricant 15 toward bearing 3, and lubricant 15 SCARCELY LEAKS OUT. In other words, the foregoing structure works as a SURFACE TENSION SEAL”, implying that even if complete solid contact is not made, the surface tension prevents the lubricant from leaking out – thereby making it “substantially” liquid-tight as claimed.

99. Applicant has argued that heat deformation of the sleeve of Fujinaka is known and that it would not be helpful to use a material according to Joachimi in the structure of Fujinaka. Applicant further argues that Fujinaka uses an adhesive and that the cap is secured by heat deformation.

100. Examiner's Response: With regards to Claim 2, the Fujinaka reference was relied on ONLY to disclose the liquid tight weld join. Applicant's arguments address other teachings (not relied on) of the Fujinaka et al reference without considering what the reference AS A WHOLE would mean to one of ordinary skill in the art. MPEP

2141.02, Section VI states that a prior art reference must be considered in its entirety, i.e., AS A WHOLE, including portions that would LEAD AWAY from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). The examiner contends that teaching relied on will be apparent to one of ordinary skill after reading the Fujinaka reference, and that it is within the capability of one having ordinary skill to apply the Fujinaka and Joachimi teachings to the Horng/Ono et al combination in the manner described in the analysis. The applicant cannot show non-obviousness by attacking the Fujinaka reference for teaching away from claimed subject matter that the Horng/Ono et al references were relied on. MPEP 2145, Section IV states: One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. In *re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); In *re Merck & Co., Inc.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

101. Applicant has argued that Ootsuka' bearings 17 and 18 remain open and unprotected, and that Horng'021 does not protect the shaft against pullout and that Schafroth explicitly warns against epilam coating and that this reference allegedly has no pertinence.

102. Examiner's Response: Once again, applicant is attacking references individually for not disclosing claim limitations that other references (Horng/Ono et al) were relied on (see above discussion). The ONLY teaching that the Schafroth reference was relied on is that epilam is an insulator, and although Schafroth states that meshing parts should

not be epilamized because epilam acts as an insulator, one of ordinary skill will recognize that should the need arise to insulate meshing parts from one another - then epilam would be a suitable choice. As discussed above, a prior art reference must be considered in its entirety, i.e., AS A WHOLE, including portions that would LEAD AWAY from the claimed invention.

103. All of applicant's arguments have been carefully considered, however they are not persuasive for the reasons above. The examiner therefore respectfully disagrees with applicant's arguments.

Conclusion

104. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DNYANESH KASTURE whose telephone number is (571)270-3928. The examiner can normally be reached on Mon-Fri, 9:00 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on (571) 272 - 7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Devon C Kramer/
Supervisory Patent Examiner, Art
Unit 3746

DGK